

1/2 032 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--NUCLEON COMPOSITION AND EXCITATION ENERGY OF FISSIONABLE NUCLEI  
DURING THE IRRADIATION OF BISMUTH-209, LEAD-208, AND GOLD-197 TARGETS BY  
AUTHOR--(05)--KOMAR, A.P., BOCHAGOV, B.A., KOTOV, A.A., SEMENCHUK, G.G.,  
SOLYAKIN, G.YE. **K**  
COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(6), 1308-11, PHYS

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--NUCLEAR STRUCTURE, NUCLEAR FISSION, EXCITATION ENERGY, KINETIC  
ENERGY, FISSION PRODUCT, PHOTONUCLEAR REACTION, BISMUTH ISOTOPE, LEAD  
ISOTOPE, GOLD ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1992/0947

STEP NO--UR/0020/70/190/006/1308/1311

CIRC ACCESSION NO--AT0112109

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0112109

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE N COMPN., A AND Z, AND THE EXCITATION ENERGY, E SUBEX, WERE DETD. ON THE BASIS OF AVAILABLE EXPTL. DATA (KOMAR, ET AL. (1969) AND SCHNITT, ET AL. (1965)). THE KINETIC ENERGY, E SUBK PRIME1 OF FRAGMENTS WAS CALCD. BY E SUBK PRIME1 EQUALS  $0.1071Z$  PRIME2-A PRIMEONE THIRD MINUS 22.2 MEV (VIOLA AND SEABORG, 1966). THE ENERGY AFTER EMISSION, E SUBK PRIME1, DECREASED AS THE MASS OF THE BOMBARDING TARGET INCREASED. IT WAS MORE PRONOUNCED FOR PRIME209 BI AND PRIME208 PB THAN FOR PRIME197 AU. THE TOTAL NO. OF N FROM FRAGMENTS V SUBT EQUALS A (1 MINUS E SUBK PRIME1-E SUBK PRIME1). E SUBEX WAS CALCD. FROM V SUBT FOR EACH FRAGMENT. THE CLOSEST AGREEMENT BETWEEN CALCD. AND EXPTL. VALUES WAS OBTAINED FOR PRIME193 IR IN THE IRRADN. OF AN AU TARGET. FACILITY: FIZ.-TEKH. INST. IM. IOFFE, LENINGRAD, USSR

UNCLASSIFIED

USSR

UDC 621.357.7:669.35'.5(088.8)

OREKHOVA, V. V., ANDRYUSHCHENKO, F. K., and KOMAR', L. P., Kharkov University

"Electrolytic Plating of Copper-Zinc Alloys"

USSR Author's Certificate No 305207, Filed 20 Dec 69, Published 13 Jul 71  
(from Referativnyy Zhurnal -- Khimiya, No 21(II), 1972, Abstract No 21L312P  
by E. Z. Napukh)

Translation: This method differs from other by the presence of the ligand  $K_4P_{20}_7$  and sodium sulfosalicylate which make it possible to obtain shiny coatings. Example: the alloy containing 67-72% Cu is electrodeposited from the electrolyte consisting of (in g/liter) 55-60  $ZnSO_4$ , 5-10  $CuSO_4$ , 240-250  $K_4P_{20}_7$ , 28-33 sodium sulfosalicylate at pH 8.9-9.2, 18-25°C, and  $D_c$  of 0.5-1 a/dm<sup>2</sup>.

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UDC: 539.3:534.1

KOMAR, N. M., CHIRKOV, V. P.

"Experimental Investigation of Errors in Measurement of Random Vibrations in Plates"

Tr. Mosk. energ. in-ta (Works of Moscow Power Engineering Institute), 1972, vyp. 101, pp 95-99 (from RZh-Mekhanika, No 9, Sep 72, Abstract No 9V239)

Translation: The paper compares the results of a theoretical and experimental study of errors of vibration measurement caused by the influence of the pickup. The pickup was located in the center of a circular plate clamped around the edge and subjected to kinematic random action. The external effect was considered time-stationary. The solution was sought as an expansion in normal modes of a circular massless plate with subsequent application of the spectral method. The error in vibration measurements was evaluated by a function which was the ratio of the difference between the spectral densities of accelerations of flexure of the plate in the center for different pickup masses to the spectral density for one of the masses. The experimental research was done on a Duralumin plate 2.5 mm thick with a radius of 74 mm. An IS 318-1 accelerometer was used together

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KOMAR, N. M., CHIRKOV, V. P., Tr. Mosk. energ. in-ta, 1972, vyp. 101, pp 95-99

with additional masses. Excitation was done on an electrodynamic stand using a noise generator. The method of processing the results of measurements is described. Satisfactory agreement is noted between the theoretical and experimental results. Yu. N. Novichkov.

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F. Mathematical Problems in Semiotics

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KOMOR, T.

"One Property of Modified Separated Grammars"

Zh. Vychisl. Mat. i Mat. Fiz. [Journal of Computer Mathematics and Mathematical Physics], 1972, Vol 12, No 6, pp 1612-1615 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V748, by A. Fuksman).

Translation: Semiseparated grammars (RZhMat, 1969, SV545)  $G = (V, \Sigma, P, \sigma)$  are studied, i.e., grammars such that rules  $P$  for symbol  $x$  from  $V - \Sigma$  have the form  $x \rightarrow a_i a_j$  and  $x \rightarrow \epsilon$ , where  $a_i \neq \epsilon$ ,  $a_i \neq a_j$  where  $i \neq j$ . The following condition is added: if  $\delta \rightarrow \theta x \phi$ ,  $\theta \in \Sigma^*$ , while the rule  $x \rightarrow \epsilon$  obtains for  $x$ , the sets of initial symbols from the terminal chains produced from  $x$  and from  $\phi$  do not intersect. The MP grammars produced allow rapid top to bottom analysis and correspond in generating force to the LF grammars of Wood. It is proven that they generate a subclass of deterministic KC languages, and an error is noted in a proof of this fact suggested earlier.

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UDC 616.981.553-085

KHOCHAVA, A. I. and KOMAR, V. I., Chair of Infectious Diseases, Grodno Medical Institute

"Clinical Picture and Therapy of Botulism"

Minsk, Zdravookhraneniye Belorussii, No 4, 1971, pp 30-32

Translation: The incidence of botulism has slightly increased in recent years owing to the popularity of home canning of foods and mistakes made in the canning process (V. A. Shalygin and A. I. Maslovskiy, 1967; Ye. G. Popkova and T. V. Duka, 1968; et al). Between 1966 and 1968 20 persons with botulism (5 children and 15 adults) treated in various hospitals of Grodno Oblast were observed. Eight became infected by eating mushrooms canned at home, three by eating canned vegetables (lecho, green peas), and nine by eating a variety of canned meat products. Nine became sick in October and November, 10 in March, April, and May, and one in June. Botulism was diagnosed in a polyclinic in only three persons, while the other patients were treated as outpatients for acute gastritis, sore throat, acute respiratory disease, myopathy, and so forth. Since the treatment was ineffectual, the patients were sent to a hospital with a tentative diagnosis of botulism. The patients were admitted

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KHOCHAVA, A. I., et al, Zdravookhraneniye Belorussii, No 4, 1971, pp 30-32

at different times: two on the 2nd day of the disease, four between the 3d and 5th days, eight between the 6th and 10th days, two after the 10th day, and five after the 20th day. No relationship was detected between the length of the incubation period and the severity of the disease. It lasted 24 hours in four patients, 2 days in 11, 3 days in two, and about 5 days in three. The disease was mild in six, moderately severe in 12, and severe in two. The disease set in acutely with general weakness, headache, vertigo, nausea, vomiting, pronounced dryness of the mouth, and pain in the epigastrium. Thirteen had a distended abdomen and 16 suffered from constipation. The stools were frequent, liquid, and watery during the first two days of the disease in six patients who subsequently developed constipation. The characteristic eye symptoms appeared in 17 patients after 2 or 3 days: deterioration of vision ("mist in the eyes", "screen before the eyes"), double vision, and blurring of printed letters while reading. The pupils were dilated in 16 cases and the reaction to light was sluggish. Anisocoria was noted in two cases, ptosis in five cases and in two of those with a severe course of the disease, the ptosis was intense and protracted. From the onset of the disease 14 patients found swallowing painful and difficult and two with a severe course developed paresis

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of the facial nerve. In the acute phase muscle tone decreased sharply in six patients. Abdominal reflexes were weak in four patients with a moderately severe form of the disease and nonexistent in two with a severe course. The heart tones were dull in 11 and tachycardia was noted in 10. Arterial pressure remained more or less unaffected. There were no changes in the lungs. The liver was enlarged in three patients. The body temperature rose to 38°C to 38.5°C in five patients during the first few days of the disease. An elevated temperature at the onset of botulism is mentioned by N. S. Slutskiy et al. (1934), P. F. Changli-Chaykin (1937), and K. V. Bunin and N. I. Rashba (1962). Ten patients had moderate leukocytosis and neutrophilosis with a shift to the left. Two patients with a severe course had transient albuminuria. No differences were observed in the clinical picture of the disease in relation to the nature of the food products responsible. All the patients were given antitoxin serum (from 10,000 to 40,000 IU types A, C, E and 5000 to 20,000 type B) to be injected intramuscularly. Those with a moderately severe or severe form did not show a distinct clinical effect until 3 to 4 days after receiving the serum. Those with a mild course were given the serum only once. It was injected intravenously into one patient with a severe course and into three others with a moderately severe course because they were admitted

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late to the hospital. The serotherapy was generally combined with desensitizing agents (calcium gluconate, dimedrol, pipolphen) and antibiotics (penicillin, tetracycline). All received gastric lavages and enemas. Patients with a moderately severe or severe form of the disease were given intravenous infusions of physiological saline, 5% glucose with ascorbic acid, and vitamins B<sub>1</sub>, E<sub>6</sub>, and B<sub>12</sub> intramuscularly. Five patients were given prednisolone and four of them received in addition antitoxin serum intravenously. Analeptics (cardamine, corazole, pentylentetrazolm, strychnine) and anticholinesterase agents (neostigmine) were prescribed when indicated. General improvement set in starting on the 3d or 4th day of treatment. Dyspeptic phenomena disappeared, general weakness, dryness in the mouth, and difficulty in swallowing diminished, but vision was restored slowly. The main symptoms of the disease intensified in four patients after they had improved clinically, so that they were again given antitoxin serum. Three patients with a severe or moderately severe course developed complications in the form of severe myocarditis, while four developed mild serum sickness 5 to 8 days after the start of serotherapy. Recovery set in after 2 to 3 weeks in those with a mild

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form, after 4 to 5 weeks in those with a moderately severe form, and after 2 months in those with a severe form. One 4-year-old child with a very severe form dies. He had been admitted on the 2d day of the disease with a diagnosis of encephalitis and did not respond to serotherapy. The diagnosis was confirmed by laboratory tests in only three patients (type E botulism). Despite the fact that even the mild forms of botulism produced the characteristic clinical picture, in two patients the ophthalmoplegic phenomena were considered apart from anamnesis and they were treated for one month by an ophthalmologist for myopia. In another patient, marked neurological symptoms in the form of paralysis of the soft palate, ptosis, impaired vision, dysphagia, and respiratory disorders were regarded as encephalitis. Two patients with complaints of dryness of the mouth and difficult and painful swallowing were treated on an outpatient basis for acute respiratory disease.

#### Conclusions

1. The clinical symptoms of botulism are sufficiently characteristic to warrant an unerring diagnosis.

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2. Severe and moderately severe forms of the disease are often complicated by severe myocarditis.

3. Serotherapy, even if initiated late, has a distinct therapeutic effect, but recurrences are possible.

4. Steroid hormones should be part of the comprehensive therapy of the moderately severe and severe forms of botulism.

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UDC: 621.397.037:681.84.083.8

KOMAR, V. G.

"Motion Picture and Television Technology"

V sb. Televizion. tekhnika (Television Technology--collection of works), Moscow, "Svyaz", 1971, pp 182-225 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6G160)

Translation: Data are given on equipment for making TV films and on a system of TV recording and playback of films. Forty-one illustrations, bibliography of sixty-four titles. N. S.

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1/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--NONLINEAR INTERACTION OF WAVES DURING ULTRASOUND AMPLIFICATION IN  
CADMIUM SULFIDE -U-  
AUTHOR-(02)-KOMAR, V.K., TIMAN, B.L.  
COUNTRY OF INFO--USSR  
SOURCE--FIZ. TVERD. TELA 1970, 12(1), 304-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, PHYSICS  
TOPIC TAGS--CADMIUM SULFID, WAVE FRONT, ULTRASONIC WAVE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1984/0221 STEP NO--UR/0181/70/012/001/0304/0305  
CIRC ACCESSION NO--AP0055017  
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0055017

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT WAS OBSD. OF INCREASED AMPLITUDE OF 1 WEAK ULTRASONIC WAVE IN THE PRESENCE OF ANOTHER STRONGER WAVE, BOTH WAVES PROPAGATING SIMULTANEOUSLY IN CDS. THE DEPENDENCE OF AMPLIFICATION OF THE SIGNAL ON THE INTENSITIES OF BOTH WAVES AND THE DEPENDENCE OF AMPLIFICATION ON COND. ARE GIVEN. THE OBSD. EFFECT CAN BE EXPLAINED BY A COMPLEX NONLINEAR INTERACTION OF THE SIGNALS WITH WAVES OF SUM AND DIFFERENCE FREQUENCIES.

UNCLASSIFIED

USSR

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KOMAR', V. K.: TIMAN, B. L., All-Union Scientific Research Institute  
of Monocrystals, Khar'kov

"The Interaction of an Ultrasonic Wave With Acoustic Noise in  
Amplifying CdS"

Leningrad, Fizika Tverdogo Tela, Vol 12, No 6, June 1970, pp 1819-  
1820

Abstract: As is known, the presence of acoustic noise in piezo semi-  
conductors exerts a substantial effect upon the amplification of an  
ultrasonic signal. One of the mechanisms of this influence is  
connected with the nonlinear interaction of the signal with acoustic  
noise; however, this mechanism has practically not been studied at all,  
and it is of interest to study it in detail. In the present study,  
with a fixed field and with fixed conductivity of the specimen, an  
experimental study has been made, on one hand, of the influence of  
acoustic noise upon signal amplification, and, on the other hand,  
of the change of the noise level in case of the synchronous propaga-  
tion of noise along the specimen with the ultrasonic signal.

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1/2 031 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--EFFECTS RELATED TO THE INTENSIFICATION OF ORLIQUE ACOUSTIC NOISE IN  
CADMIUM SULFIDE -U-  
AUTHOR-(02)-KOMAR, V.k., TIMAN, B.L.  
COUNTRY OF INFO--USSR  
SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 488-90  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--ACOUSTIC NOISE, CADMIUM SULFIDE, SINGLE CRYSTAL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1997/1705 STEP NO--UR/0449/70/004/003/0488/0490  
CIRC ACCESSION NO--AP0120417  
UNCLASSIFIED

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PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120417

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IF THE COND. OF A CDS SINGLE CRYSTAL LIES IN A CERTAIN RANGE, THE FIELD DEPENDENCE OF THE INTENSIFICATION OF NOISE IN SUCH A CRYSTAL POSSESSES 2 MAX. THE 1ST MAX. IS BONDED WITH THE INTENSIFICATION OF "STRAIGHT" WAVES, WHICH PROPAGATE ALONG THE FIELD DIRECTION PARALLEL TO THE BASIS PLANE AND THE 2ND ONE (OCCURRING IN HIGHER FIELDS) IS BONDED WITH THE INTENSIFICATION OF "OBLIQUE" WAVES, I.E., THE ANGLE BETWEEN THE WAVE PROPAGATION DIRECTION AND THE BASIS PLANE IS 60DEGREES. THE CURRENT, INTENSIFICATION, AND NOISE CHARACTERISTICS OF CDS SINGLE CRYSTALS WERE STUDIED EXPTL.; THE ANOMALIES FOUND, E.G., IN THE FIELD DEPENDENCE OF THE AMPLITUDE OF TRANSFORMED MODES OF NOISE OSCILLATIONS, ARE RELATED TO THE PRESENCE OF OBLIQUE NOISE.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--INFRARED SPECTROSCOPIC STUDY OF 5,6,CELLULOSENE ACETATES -U-  
AUTHOR--KOMAR, V.P., ZHBANKOV, R.G., DIMITROV, D.G., GALBRAYKH, L.S.,  
ROGOVIN, Z.A.  
COUNTRY OF INFO--USSR K  
SOURCE--VYSOKOMOL. SOEDIN. SER. B 1970, 12(1), 77-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CELLULOSE RESIN, ACETATE, IR SPECTRUM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1989/0228 STEP NO--UR/0460/70/012/001/0077/0079  
CIRC ACCESSION NO--AP0106884  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106984

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURES OF 5,6,CELLULOSENE (1) ACETATES CONTG. OAC GROUPS AT C-5, C-2, C-3, AND C-5; AND AT C-2, C-3, C-5, AND C-6, WERE STUDIED BY IR SPECTROSCOPY AT 400-3800CM PRIME NEGATIVE1. SEVERAL ABSORPTION BANDS AT 1730, 1240, 1060, AND 600CM PRIME NEGATIVE1 SUGGESTED THAT 1 ACETATE RESULTED FROM THE IONIC ADDN. OF ACOH TO THE DOUBLE BOND. THE DIFFERENCE BETWEEN THE SPECTRA OF 1 ACETATE (CONTG. AN OAC GROUP AT C-5) AND 1 TRIACETATE (CONTG. OAC GROUPS AT C-5, C-2, AND C-3) INDICATED THAT THE FREQUENCIES AND VIBRATION INTENSITIES OF OAC GROUPS WERE SENSITIVE TO THE SPATIAL ORIENTATION. ABSORPTION BANDS AT 600 AND 900CM PRIME NEGATIVE1 WERE ESP. SENSITIVE TO A CHANGE IN THE RELATIVE ORIENTATION OF OAC GROUPS, A PROPERTY TO BE UTILIZED FOR REFINED STRUCTURAL ANAL.

UNCLASSIFIED

Acc. Nr. 110050765 — Abstracting Service:  
CHEMICAL ABST. 5/70

Ref. Code

4R0368

105401w Infrared spectra of insoluble products of  $\gamma$ -irradiated starch. Zhabankov, R. G.; Komar, V. P.; Korotchenko, K. A. (USSR). *Zh. Prikl. Spektrosk.* 1970, 12(1), 149-50 (Russ).  
The ir spectra ( $600-3800\text{ cm}^{-1}$ ) of insol. particles isolated from corn starch  $\gamma$ -irradiated with 15-800 megarad dose (300 R/sec) were studied. In the regions of CH stretching and deformation vibrations, the spectra of the particles coincide with those of albumin and  $\gamma$ -globulin and are very similar to the spectrum of *Escherichia coli* bacterium. A relatively intense band at  $\sim 1100\text{ cm}^{-1}$ , characteristic of sugars, was obsd. The N content in the materials studied was 5.9-10.6%.  
Vaclav Sara

REEL/FRAME

1/2 026 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--USE OF A NEW LUBRICATING ADDITIVE FOR DRILLING MUDS DURING DIAMOND  
DRILLING OF GEOLOGICAL BOREHOLES -U-  
AUTHOR-(05)-ZAYONTS, O.L., KOMAR, V.YA., PUKAS, A.I., YAROV, A.N., KENDIS,  
M.SH.  
COUNTRY OF INFO--USSR  
SOURCE--RAZVED. OKHR. NEDR 1970, 36(3), 37-40  
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, EARTH SCIENCES AND  
OCEANOGRAPHY, MATERIALS  
TOPIC TAGS--LUBRICANT ADDITIVE, VEGETABLE OIL, LUBRICATING OIL, DRILLING  
MUD, DIAMOND, GEOLOGY, DRILLING MACHINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/2068

STEP NO--UR/9083/70/036/003/0037/0040

CIRC ACCESSION NO--AP0127441

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0127441

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TARS FROM SOAPSTOCKS OF BLACK COTTONSEED OIL AND TECH. FATS (ACID NO. 130-200 MG KOH, MOL. WT. 475-522, D. 0.872) WERE USED IN AMTS. OF 2PERCENT AS LUBRICATING ADDITIVES TO MUDS DURING DIAMOND DRILLING. THE RESULT WAS SIMILIAR TO 50PERCENT DECREASE IN SURFACE TENSION OF MUDS, SIMILIAR TO 100-200PERCENT INCREASE IN DRILLING RATE, AND SIMILIAR TO 35PERCENT REDN. OF WEAR OF DIAMOND CROWNS. FACILITY: TREST, KIEVGEOLOGIYA, KIEV, USSR.

UNCLASSIFIED

USSR

UDC 577.391

MIKHAYLOVA, N. YA., and KOMAR, V. YE., Central Scientific Research Rentoeno-Radiological Institute, Ministry of Health USSR, Leningrad

"Cytogenetic Damage to Cells of the Regenerating Rat Liver After Whole-Body Irradiation of the Animals With X-Rays or High-Energy Protons"

Moscow, Radiobiologiya, Vo, 11, No 4, Jul/Aug 71, pp 618-623

Abstract: Rats were subjected to partial hepatectomy and then irradiated with x-rays in a dose of 400 rad or with 645 Mev protons in an equivalent dose. Irradiation was carried out in the periods  $G_1$  (5-5.5 hrs after hepatectomy) and S (23-24 hrs after hepatectomy) of the cell cycle. On x-ray irradiation the sensitivity in the period  $G_1$ , as indicated by the number of cells with chromosome aberrations, was higher than in the period S, while on proton irradiation no such distinction between the two periods was observed. The relative biological effectiveness of protons was 1 for the period  $G_1$  and 1.6 with a gradual drop to 1 for the period S.

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USSR

UDC 537.312.62

KONOVOICHENKO, V. A., DMITRIYEV, V. M., KOMAREVSKIY, S. K., LOKTIONOV, N. F.

"Nonisothermal Superconducting Bolometer. II"

Tr. Fiz.-tekhn. in-t nizek. temperatur AN USSR (Works of the Physico-Technical Low Temperature Institute of the Ukrainian SSR Academy of Sciences), 1970, vyp. 9, pp 72-84 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract 4D463)

Translation: The concept of creating a nonisothermal superconducting bolometer arises directly from the statement of the problem of thermal conductivity for an ordinary (isothermal) superconducting bolometer considering non-uniformity of the temperature distribution along its sensitive element. However, along with the useful effect used, the understanding of the fact of simultaneous existence of sections with different superconducting states in the sensitive element of the superconducting bolometer implies significant complication of the problem which in this statement is very simple for ordinary bolometers. In some practical cases the sections of the sensitive element in the intermediate state make an insignificant contribution to its total electrical resistance, and analysis of the operation of the superconducting bolometer can be greatly simplified if only its superconducting and

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KONOVODCHENKO, V. A., et al., Tr. Fiz.-tekhn. in-t nizek. temperatur AN USSR, 1970, vyp. 9, pp 72-84

normal sections are considered. This problem was investigated earlier by the authors. This paper is devoted to solving the most general stationary problem of thermal conductivity of nonisothermal superconducting bolometers and development of a method of graphoanalytical investigation of its characteristics. A system of equations for determining the current coordinates of the boundaries of the sections of the superconducting bolometer with different states of the superconductor was obtained as a result of solving this problem. A number of special cases of solving the system are investigated, which along with having independent value, also turn out to be very useful when writing and developing the program for its complete solution. There are 2 illustrations and a 4-entry bibliography.

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172 007 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--AZOLIDONES AND THEIR DERIVATIVES. III. SYNTHESIS AND SOME  
TRANSFORMATIONS OF 4,THIOXO,5,ALKYL,2,THIAZOLIDINONES -U-  
AUTHOR-(G2)-PLEVACHUK, N.YE., KOMARITSA, I.D.  
COUNTRY OF INFO--USSR  
SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (2), 159-60  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--THIAZOLE, AROMATIC KETONE, HETEROCYCLIC BASE COMPOUND,  
CHEMICAL SYNTHESIS, HETEROCYCLIC NITROGEN COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1987/1094 STEP NO--UR/0409/70/000/002/0159/0160  
CIRC ACCESSION NO--AP0204492  
UNCLASSIFIED

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PROCESSING DATE--19SEP70

CIRC ACCESSION NO--APO204492

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. I (R PRIME1 EQUALS O) (0.04 MOLE), 0.014 MOLE P SUB2 S SUB5, AND 10 ML ABS. DIOXANE WAS REFLUXED 4 HR TO GIVE I (R PRIME1 EQUALS S) (II) (R PRIME2, PERCENT YIELD, AND M.P. (H SUB2 O) GIVEN): ME, 55, 110DEGREES; ET, 60, 108DEGREES; ISO-PR, 40, 83DEGREES. II, PHNH SUB2, OR ISONICOTINOYL HYDRAZIDE (0.01 MOLE EACH), AND 10 ML MECH WAS REFLUXED 1 HR TO GIVE 40-50PERCENT I (R PRIME1, R PRIME2, AND M.P. GIVEN): PHN, ME, 190DEGREES (DECOMPN.); PHN, ET, 174DEGREES; PHN, ISO-PR, 193DEGREES (DECOMPN.); Q, ME, 179DEGREES; Q, ET, 167DEGREES; Q, ISO-PR, 175DEGREES. SIMILARLY, I (R PRIME1 EQUALS PHNH) WERE OBTAINED AT ROOM TEMP. (R PRIME2, PERCENT YIELD, AND M.P. (MECH) GIVEN): ME, 64, 231DEGREES; ET, 74, 131DEGREES (DECOMPN.); ISO-PR, 62, 149DEGREES. II (0.01 MOLE) IN 6 ML CONCD. NH SUB3 WERE HEATED 15 MIN ON A BOILING WATER BATH TO GIVE I (R PRIME1 EQUALS NH) (R PRIME2, PERCENT YIELD, AND M.P. (DECOMPN.) (H SUB2 O OR MECH) GIVEN): ME, 48, 194DEGREES; ET, 51, 211DEGREES; ISO-PR, 70, 236-8DEGREES. SIMILARLY, 4,IMINO,5,ALKYLIDENE,2,THIAZOLIDINONES WERE OBTAINED (ALKYLIDENE, PERCENT YIELD, AND M.P. (DECOMPN.) GIVEN): PHCH, 65, 266DEGREES (ACOH); ALPHA--NPAPHYLMETHYLENE, 70, 248DEGREES (DIOXANE); 3,4,(MEO)SUB2 C SUB6 H SUB3 CH, 50, 260DEGREES (ACOH).

UNCLASSIFIED

USSR

UDC 538.113

KOMAR'M I. N., NIKOLOV, O. T., and MAYER, I.

"On the Structure and Stability of Free Radicals Produced in  $\gamma$ -Irradiated Glycine"

Kiev, Teoreticheskaya i Eksperimental'naya Khimiya, No 4, Jul/Aug 70, pp 561-566

Abstract: The article deals with post-radiation processes in gamma-irradiated glycine. Polycrystalline and monocrystalline specimens of  $\alpha$ -glycine were studied. A  $\text{Co}^{60}$  source with a dose rate of 3000 roentgens per minute was used. The total dose was  $10^5$ - $10^7$  roentgens. Post-radiation heating of the irradiated specimens showed that three types of free radicals are formed under normal conditions:  $\text{CH}_2\text{COC}^\cdot$ ,  $^\cdot\text{NH}_2\text{CH COO}^-$  and  $\text{NH}_2\text{CHOO}^\cdot$ . Specimens freshly irradiated at room temperature contain about 38, 58 and 4% of these free radicals, respectively. The last free radical is the most stable, while the first is the least stable. With irradiation doses of about  $10^5$  roentgens, recombination of all three free radicals is described by first order processes. Electron paramagnetic resonance spectra of polycrystalline and monocrystalline specimens of normal  $\alpha$ -glycine irradiated at room temperature are identified.

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USSR

UDC 530.4:624.011

KOMAROV, A. A.

"Designing Structures with the Most advantageous Distribution of Material"

Tr. Kuybyshev. Aviats. In-t (Works of the Kuybyshev Aviation Institute), No 54  
1971, pp 3-8 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No  
2V983 by N. I. Abramov)

Translation: A systemized presentation of previously published material is  
presented, and is supplemented by a solution of the problem for several loads.  
The target function is the force weight, which equals  $\int_V \sigma_{pr} dv$ ,

where  $\sigma_{pr}$  is a tangent equivalent in value to the potential energy of  
the elementary volume of the structural material  $dv$ . With a single load the  
problem is solved by multiple redesigning according to the scheme:  $F_1 \rightarrow N_1$   
 $\rightarrow F_2 \rightarrow N_2 \dots$ , where  $F$  and  $N$  are the area of the structural element  
and the force acting in it.

For some independent loads, a structure with equal values of  $\max \sigma_{pr}$ ,  
where  $\max \sigma_{pr}$  is the greatest of several values of  $\sigma_{pr}$  corresponding to  
several loads. Two examples are given. Cases in which the computation algorithm  
brings about a divergent process are not considered.

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USSR

UDC 629.78.015.4

KOMAROV, A. A.

"Planning of Structures with Most Suitable Distribution of Material"

Tr. Kuybyshev. Aviats. In-t. [Works of Kuybyshev Aviation Institute], 1971, Vol 54, pp 3-8. (Translated from Referativnyy Zhurnal Raketostroyeniye, No 1, 1972, Abstract No 1.41.165 by T. A. Ye.)

Translation: The optimal design is taken to be that with the least volume of material, but the author introduces new definitions in order to create general planning methods. The concept of the power weight of a structure is introduced in order to allow quantitative evaluation of the distribution of internal forces. The power weight is a quantitative indicator considering the intensity of internal forces and the duration of their action. In the general case, the power weight is calculated according to the expression  $S_V \sigma_{pr} dV$ , where  $dV$  is an elementary volume, while  $\sigma_{pr}$  is the stress equivalent in potential energy to the actual stress state of the element. A quantitative estimate of structural deformations can be provided by the value of potential energy. The power weight, potential energy and material volume allow quantitative comparisons of various structural versions to be made.

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Forming

USSR

UDC 621.983.1:678.664

KOMAROV, A. D., RYBYKH, A. A., SHADRIN, V. K., and KIROV, F. V.

"Stamping Sheet Parts with Polyurethane"

Moscow, Kuznechno-Shtampovochnoye Proizvodstvo, No 9, Sep 73, pp 26-29

Abstract: The use of polyurethane cushions along with or instead of rubber cushions, due to their better properties, is described in the forming of aluminum alloys (D16AM, A16AT, AMTsM, AMg6M, and AMg3M), stainless steels, and titanium alloys of different thicknesses depending on the class of the formed parts (straight-line edges, small and large curvature convex sides, and small and large curvature concave sides). The class of straight-line edges allows thicknesses of 5, 1.5, and 1.2 mm to be stamped for Al, stainless steel, and Ti parts; small radius of curvature permits thicknesses of 3, 1.2, and 1 mm, respectively for Al, stainless, steel and Ti to be stamped; while for a large radius of curvature the thicknesses are 2 mm for Al and 1.2 for stainless steel (thickness not given for Ti). For straight-line stamping no manual finishing is required while for the other two classes, a small amount of manual finishing is required. During 1971-72, 4,727 parts were produced by stamping in a rubber-polyurethane container with a pressure up to 800 kgf/cm<sup>2</sup>,  
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KOMAROV, A. D., et al., Kuznechno-Shtampovochnoye Proizvodstvo, No 9, Sep 73, pp 26-29

and almost 3,000 items were converted to cutting production using the same technology. The overall economic effect from introduction of cutting and forming processes in the described container, in conjunction with developed technology and equipment, amounted to 613,500 rubles/year. Six figures, 12 bibliographic references.

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1/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--APPARATUS FOR DETERMINING THE SPECIFIC HEAT OF LIQUID SUBSTANCES BY  
A PULSED ADIABATIC METHOD -U-  
AUTHOR-(04)-YEGOROV, B.N., KILESSO, V.S., KOMAROV, A.G., SLEPCHENKO, V.I.  
COUNTRY OF INFO--USSR  
SOURCE--TEPLOENERGETIKA 1970, 17(3), 84-6  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--CALORIMETER, THERMAL ANALYSIS, SPECIFIC HEAT, HEATING,  
ADIABATIC PROCESS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1992/0387 STEP NO--UR/0096/70/017/003/0084/0086  
CIRC ACCESSION NO--AP0111580  
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0111580

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PULSE ADIABATIC CALORIMETER FOLLOWING THE AUTHORS' CONCEPTS (1968) WAS CONSTRUCTED FOR MEASURING HEAT CAPACITIES  $C_{SUBP}$  AND  $C_{SUBV}$  OF LIQS. AT 80-600DEGREESK AND IS SMALLER THAN OR EQUAL TO 300 ATM. THE INNER PART OF THE CALORIMETER CONSISTS OF SEVERAL CELLS WHICH ARE SIMULTANEOUSLY HEATED FOR SIMILAR TO 1.5 SEC AND THE TEMP. (T) OF THE CENTRAL CELL IS RECORDED. A SINGLE RUN LASTS IS SIMILAR TO 20 SEC. THE MAX. POSSIBLE ERROR WAS ESTD. AS PLUS OR MINUS 1.5PERCENT. THE DIFFERENTIAL EQUATIONS FOR DETG. THE TIME DEPENDENCE OF T WERE SOLVED.

UNCLASSIFIED

USSR

UDC: 532.526

KLIMNYUK, Yu. I., KOMAROV, A. P.

"Approximate Method of Calculating the Parameters of the Region of Interaction Between a Normal Shock and a Turbulent Boundary Layer"

Tr. Kuytyshev. aviats. in-t (Works of the Kuybyshev Aviation Institute), 1971, vyp. 35, pp 126-132 (from RZh-Mekhanika, No 9, Sep 72, Abstract No 9B839)

Translation: When a normal compression shock interacts with a boundary layer, a  $\lambda$ -system of shocks is formed which consists of the main normal shock, and leading and trailing oblique shocks. In this paper, the conventional empirical relation between the pressure drop due to detachment and the Mach number is used together with the expression for the oblique compression shock to calculate the characteristics of the region of interaction: the angle of flow deflection in the leading oblique shock, the Mach number behind the leading and trailing shocks, the coefficient of restitution of total pressure behind the region of interaction. The additional empirical relation between the height of the region of interaction and the thickness of displacement in the undisturbed flow was used to calculate the relative thickness of displacement behind the region of interaction as well. Bibliography of 11 titles. V. Ya. Borovoy.

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USSR

KLIMNYUK, Yu. I., KOMAROV, A. P.

"Approximate Method of Calculating Characteristics of a Flat, Semi-Free Wake"

Tr. Kuybyshev. Aviats. In-t. [Works of Kuybyshev Aviation Institute], 1971, No 35, pp 133-142, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 B469, by L. V. Nosachev).

Translation: A method is suggested for calculating a semi-free wake in a subsonic flow with a longitudinal pressure gradient for calculation of integral flow characteristics beyond a straight compression jump in the area of its interaction with the boundary layer on a plate and analysis of the flow in a two-row compressor blade set if the wake from a blade of the first row strikes a blade of the second row. As the integral thicknesses of the semi-free wake are determined in the cross section in question, the influence of the boundary layer arising on the limiting wall is ignored and it is considered that the parameters of the wake in the initial cross section, as well as the change in velocity at the external boundary of the wake (in the main flow) are known. 8 Biblio. Refs.

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1/2 026 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--THE DIAGNOSIS AND OPERATIVE TREATMENT OF DUODENOCOLONIC FISTULAS IN  
PEPTIC ULCER AND CANCER OF THE STOMACH -U-  
AUTHOR--(04)-KOZHEVNIKOV, A.I., KOMAROV, A.S., SIDOROV, A.I., BARANOV,  
YU.F.  
COUNTRY OF INFO--USSR  
SOURCE--KHIRURGIYA, 1970, NR 4, PP 37-40  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DUODENUM, COLON, DIGESTIVE SYSTEM DISEASE, CANCER, EBIN, LARGE  
INTESTINE, SURGERY, STOMACH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1983/1239

STEP NO--UR/0531/70/000/004/0037/0040

CIRC ACCESSION NO--AP0054134

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054134

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS COMMIT TO PAPER FIVE OBSERVATIONS OVER PATIENTS WITH DUODENOCOLONIC FISTULAS. IN FOUR PATIENTS THE FISTULA DEVELOPED AS THE RESULT OF DUODENAL PEPTIC ULCER, IN ONE PATIENT DUE TO INFILTRATION AND DISINTEGRATION OF THE CANCEROUS TUMOR OF THE COLON. DISAPPEARANCE OR MARKED WEAKENING OF THE PAIN SYNDROME, CONSTANT DIARRHEA, CACHEXIA, AND SOMETIMES AN INCREASED APPETITE, ARE THE MAIN MANIFESTATIONS OF FISTULA. THE SURGICAL TREATMENT OF DUODENOCOLONIC FISTULAS MAY CONSIST IN SEPARATION OF THE FISTULA, SUTURING OF OPENINGS IN THE HEPATIC ANGLE OF THE LARGE INTESTINE, DUODENUM AND RESECTION OF THE STOMACH. AS A PALLIATIVE OPERATION IN DUODENOCOLONIC FISTULA DUE TO CANCER, WHEN A RADICAL OPERATIVE INTERVENTION IS IMPOSSIBLE, ONE COULD EXCLUDE THE PYLORUS, ESTABLISH GASTROENTEROSTOMY WITH AN INTERINTESTINAL ANASTOMOSIS AND ILEOTRANSVERSOSTOMY.

UNCLASSIFIED

USSR

UDC 619:576.807

KOMAROV, B. A., Candidate of Veterinary Sciences

"Preparation of Samples From a Focus of Bacterial Infection"

Moscow, Veterinariya, No 1, Jan 71, pp 109-110

Translation: The specific identification of bacterial agents in environmental objects is a difficult problem presenting several unusual features. It must be done in a very short time. A large number of samples of different kinds of materials must be brought to a laboratory where they must be examined for many species of microorganisms at the same time.

It must be kept in mind that the environment is not a natural site for pathogenic microorganisms. With a few exceptions, the pathogenic microbes remain there briefly, where they undergo certain changes. Hence only an insignificant number may be present in samples taken from environmental objects.

Consequently, the microbiological methods widely used to determine the type of agent in a sick person or animal carcass cannot be fully applied

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KOMAROV, B. A., Veterinariya, No 1, Jan 71, pp 109-110

to the investigation of environmental objects without taking into account the characteristics of the agents that may be present. To identify bacterial agents, the main efforts after the material has been delivered to the laboratory must be directed toward preparing samples for examination.

The preparation necessarily involves sorting, determining the order in which the samples are to be studied, concentration of the microorganisms, and use of other methods that help in achieving rapid and accurate results.

As soon as the material is received, one must study the accompanying documents, inspect the samples, determine their suitability for analysis, log in the material, and decide on the order in which the investigation is to be made. The outer surface of the wrapping material is rubbed with a disinfectant before it is handed over to those who are to do the examination. The material must be handled with care and personal prophylactic measures carried out.

The first thing is to check for acute infectious and highly contagious

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5 to 10 min, centrifuged for 10 min at 2,000 rpm.

Contaminated water is first passed through a paper or plankton filter.

Depending on the type of test, the washings can be passed through membrane filters or treated in some other way.

Among the existing methods of concentrating the microflora, the most feasible in veterinary laboratories are centrifugation, filtration, and the biological method of concentration.

After the washing or water to be analyzed is filtered, the membrane filter is transferred with sterile tweezers to a culture medium in order to grow the microbes or to a dish to prepare smears and washings. The choice of nutrient medium is determined by the type of agent suspected. When undetermined microflora are involved, the filter can be cut into 3 or 4 pieces and placed in Petri dishes with different culture media (0.9% semiliquid MPA, MPA with glycerin and glucose, MPA with sodium sulfate and gentian

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diseases such as anthrax, plague (which can be transmitted from animals to man), botulinus toxin, and among the veterinary viral diseases, tests must be made immediately for cattle plague, African swine fever, foot-and-mouth disease, and fowl plague.

Any pathological material that may be present is examined first, because the agents find conditions in living organisms optimal for multiplication, so that it is easy to isolate and identify them. In sorting the material, similar samples from one focus of infection are pooled and examined in the same way. They can be made into suspensions, washings, or emulsions.

Samples of fodder (5 to 10 g) or vegetation (3 to 5 g) are placed in flasks, soaked with 3 to 5 parts physiological saline, and shaken for 3 to 5 min to separate the microorganisms. The resultant washing is then filtered through glass wool.

Soil samples (5 to 10 g) are placed in flasks, soaked with 5 parts physiological saline, shaken for 2 to 3 min and, after the supernatant stands for 3/8

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violet, and so forth). When the membrane filters are applied to a solid culture medium, care must be taken to prevent air bubbles from coming between the medium and the filter.

Growing microorganisms on membrane filters kept briefly in culture media is one of the fastest and most efficient ways of preparing samples for identification of bacterial agents.

To inoculate media, prepare smears, infect animals, or culture tissues, the precipitate left on the membrane filter is completely loosened, washed with a little physiological saline, and transferred with a platinum loop or Pasteur pipet to a test tube, dish with a medium, or a slide. Smears can be prepared by pressing the surface of the filter directly against the slide.

When viruses or rickettsia are to be studied, the prepared washings are freed from the bacteria by centrifugation (2,000 to 3,000 rpm for 30 min) or passed through No 1 or No 2 membrane filters. The washing must be

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KOMAROV, B. A., Veterinariya, No 1, Jan 71, pp 109-110

treated with antibiotics (1,000 units each per ml of penicillin and streptomycin). Antibiotics are not used when psittacosis is a possibility. Of particular value in identifying viruses is their preliminary accumulation by biological methods. Tissue cultures infected with the prepared washing are very important for this purpose.

To remove pathogenic microorganisms from a wet cotton plug, a little physiological solution is added to the test tube with the plug. The test tube is shaken and then examined.

If air samples on foam-gelatin or other soluble filters reach the laboratory, the filters with the microorganisms settled on them are dissolved in physiological saline after the infected air is aspirated. In the case of nonsoluble filters, the microorganisms are washed off with physiological saline.

In examining arthropods (ticks, insects) after their order of genus has been determined, washings are made from the integument. The arthropods are killed with chloroform or ether and then ground in a mortar with physiological

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saline in order to obtain a suspension. The washings and suspensions are then examined.

Meat, fish, and other products are examined without special preparation or use of suspensions (Myasnaya industriya SSSR [Meat Industry of the USSR], 1970, No 3, p 16).

In examining environmental samples for anthrax and anaerobes, the washings are heated in a water bath at 65 to 70°C for 30 min in order to destroy the vegetative microflora.

Growing microbes in meat samples for rapid laboratory diagnosis, e.g., of salmonellosis, is exceptionally important. Bits of meat are placed on Petri dishes and then kept in an incubator for 6 to 7 hours.

For biological accumulation of certain pathogens (of plague, anthrax, tularemia, glanders, melioidosis, and other diseases), good results are obtained by infecting white mice whose resistance has been weakened by

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injecting them with, e. g., cortisone 5 to 6 hours beforehand. The agents can be found in the animals' organs 20 to 40 hours later by the fluorescent antibody method.

Dissecting animal carcasses may give rise to suspicions of some infectious disease. This determines the future course of the investigation.

When necessary, haptene can be extracted from incoming samples for rapid serological tests.

Inhibitors and antibiotics are used to suppress the growth of saprophytic microorganisms.

The fluorescent antibody method is an important aid in identifying bacterial agents and in laboratory diagnosis. It must be used in all cases after the samples are prepared. Every diagnostic laboratory should have a fluorescence microscope and set of specific fluorescent sera. The procedure involves the preparation, drying, and fixing of smears, staining with fluorescent sera, and fluorescence microscopy.

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Acc. Nr: **AP0040312**Ref. Code: **URC48** *3*PRIMARY SOURCE: Eksperimental'naya Khirurgiya i Anesteziologiya,  
1970, Nr / , pp 3-10

ON THE STATE AND PERSPECTIVES IN DEVELOPMENT OF CRYOSURGERY

Sirotkina, M. G.; Gol'dina, B. G.; Gutkin, V. S.;  
Komarov, B. A.; Kondrat'yeva, N. I.; Mikhaloyts, S. N.;  
Rudnya, P. G.

The trends of development and practical evaluation of cryosurgical methods of treatment in the last two decades are presented. Their use being of pure empiric nature it has been decided to use canine palate tonsils as a suitable model for scientific optimization of demands applied to cryosurgical apparatuses and rationalization of their application. The dynamics of general and local changes after tonsillectomy in the fluid nitrogen ( $-196^{\circ}\text{C}$ ) as a cold source have been studied by clinical, haemathological and pathomorphological investigations. By lowering the temperature in the tissue under tonsil to  $-7^{\circ}\text{C}$  a subsequent expressed destructive effect can be anticipated. Complete disappearance of the tonsil tissue was observed in 51.8 per cent of cases, partial destruction—in 35.1 per cent. The authors believe that along with an intensive biological search for complex evaluation of the method a simple cryogen technique for a number of surgical fields to be equipped with must be developed.

REEL/FRA  
19741743*02.6c*



UDC: 615.361.014.413:681.3

USSR

KOMAROV, B. A., GORBOVITSKIY, Ye. V., BELOVA, I. A., and ZLOTNIKOV, V. P., All-Union Scientific Research Institute of Surgical Apparatus and Instruments

"An Apparatus for Deep Cooling of Biological Objects With Programmed Control"

Moscow, Meditsinskaya Tekhnika, No 1, 1971, pp 51-53

Abstract: A description (with photograph, line diagram, and specifications) of the KZ-8 apparatus designed by the All-Union Scientific Research Institute of Surgical Apparatus and Instruments for programmed cooling of bone marrow, blood, and other tissues, is given. When the actual temperature is different from that called for at a particular moment by the program, various mechanisms (pump, heaters) are activated at a signal from a 3-position regulator. When the actual temperature of the object is higher than that prescribed, the pump is switched on. A vacuum is created in a pipeline - heat exchanger - Dewar flask system and liquid nitrogen enters the heat exchanger which it cools upon evaporating. If the actual temperature is below that prescribed, the heaters are turned on. The heat exchanger is immersed in ethyl alcohol, petroleum ether, ethylene glycol, etc. into which containers with bone marrow, blood, etc. are set.

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USSR

~~KOMAROV, B. A.~~ Doctor of Medical Sciences, Director, Scientific Research First Aid Institute imeni N. V. Sklifosovskiy, Moscow

"First Aid Gathers Speed"

Moscow, Trud, 25 Mar 70, p 4

Abstract: The success and improvement of the first aid service network organized 50 years ago in the Soviet Union is outlined. An anniversary scientific and practical conference was held at the institute imeni M. V. Sklifosovskiy. Special attention was given to the work of the Moscow Scientific Research First Aid Institute imeni M. V. Sklifosovskiy. The receiving division of the institute receives more than 75,000 people a year, a third of which are hospitalized in the clinic. It is noted that many original procedures are used in daily practice at the institute. Various research projects are noted.

It is noted that in Penza the municipal first aid station has been reorganized as a hospital. It is also pointed out that the

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KOMAROV, B., et al., Moscow, Trud, 25 Mat 70, p 4

first aid service has many unsolved problems, such as undue delay in transferring patients from the first aid stations to the hospitals. There are serious violations of the principles of rendering emergency surgical aid and deficiencies in the diagnostic treatment process. There is especially too much delay in giving surgical treatment. It is noted that the emergency and first aid services should be combined.

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1/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--THE PATHOGENICITY OF LAMBLIA -U-  
AUTHOR--(02)-KOMAROV, F.I., KHUDOSHIN, V.A.  
COUNTRY OF INFO--USSR  
SOURCE--VOYENNO-MEDITSINSKIY ZHURNAL, NO 3, 1970, PP 52-54  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--PROTOZOA, INFECTIVITY, SMALL INTESTINE, DIGESTIVE SYSTEM  
DISEASE, PATHOGENESIS, THERAPEUTICS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3007/0698 STEP NO--UR/0177/70/000/003/0052/0054  
CIRC ACCESSION NO--AP0134435  
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134435

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALMBLIOSIS IS WIDESPREAD AMONG THE POPULATION. ACCORDING TO THE LITERATURE DATA, THE INFECTIVITY OF ADULTS VARIES FROM 3.4 TO 13PERCENT AND OF CHILDREN, FROM 16 TO 75PERCENT (A. YE. SOKURENKO, 1954; ZH. A. ALEKSANYAN, 1955; M. S. MASLOV, 1951). IN RECENT YEARS MANY WORKS ON LAMBLIOSIS HAVE APPEARED (I. D. ASS, 1964; V. K. ILINICH, 1965; M. YA. KRIVOKHIZHA, 1966; L. V. MUKHINA, 1967, AND OTHERS). HOWEVER, UP TO NOW THERE IS NO AGREEMENT ON THE PATHOGENIC ROLE OF LAMBLIA. MANY CLINICISTS CONSIDER THEM PATHOGENIC ORGANISMS AND SEE IN THEM THE CAUSE OF VERY VARIED AFFLICTIONS OF MAN (M. P. KONCHALOVSKIY AND S. M. TAREYEV, 1946; A. M. SEMENDV, 1955; A. F. TUMKA, 1967, AND OTHERS). OTHER INVESTIGATORS ADHERE TO THE OPINION THAT LAMBLIA IS HARMLESS TO MAN (I. A. RASULEV, 1957; A. I. AVENIROVA, 1966; M. V. GUBERGRITS AND V. L. VARLANOVA, 1967, AND OTHERS). A THIRD GROUP ASSUME THE POSSIBILITY OF THEIR PATHOGENIC EFFECT ON THE ORGANISM ONLY IN DISEASE OF THE GASTROINTESTINAL TRACT (M. V. FEDOROVA AND M. V. VASIL'YEVA, 1967, AND OTHERS). THE DIAMETRICALLY OPPOSED VIEWS OF THE PATHOGENICITY OF LAMBLIA CAN HAVE A NEGATIVE EFFECT ON THE ORGANIZATION OF THERAPEUTIC AND PREVENTIVE MEASURES. THIS HAS INDUCED US TO SHARE OUR OBSERVATIONS AND EXPRESS OUR POINT OF VIEW ON THIS QUESTION.

UNCLASSIFIED

1/2 007 UNCLASSIFIED  
TITLE--BLEACHING OF FIBROUS MATERIALS -U-

AUTHOR-(CZ)-KLMAROV, F.P., BULYGINA, G.K.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,407

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRATSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--04FE870

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PAPER, PATENT, SODIUM HYDROXIDE, HYDROGEN PERCHLORATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3004/1842

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AAC132107

UNCLASSIFIED

PROCESSING DATE--20NOV70

2/2 007

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AAQ132107

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. FIBROUS MATERIALS, E.G. PAPER, ARE BLEACHED IN CONTINUOUS OR BATCH APP. BY INTRODUCING SOLNS. OF H<sub>2</sub>SO<sub>4</sub> SUB2 O SUB2, NSLH, AND WATER GLASS SEP. AND WITH MIXING INTO THE SUSPENSION PREHEATED TO SMALLER THAN OR EQUAL TO 40DEGREES. THE SUSPENSION IS THEN HEATED TO 55-70DEGREES AND BLEACHED. FACILITY: ALL UNION SCIENTIFIC RESEARCH INSTITUTE OF THE CELLULOSE PAPER INDUSTRY.

UNCLASSIFIED

K  
USSR

UDC 621.396.75

KOMAROV, G. A., LARIONOV, A. S., MEDVEDEVA, L. T., PRAVDUKHIN, V. M.

"Discriminator of a Spatial Delay Tracking Meter"

Tr. Uralskogo politekhn. in-ta (Works of Urals Polytechnical Institute), 1970, Collection 183, pp 74-79 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8G91)

Translation: For direction finding methods using spaced reception, tracking meters are used based on correlation processing of the received signal. The discrimination characteristic of the tracking meter for measuring the relative delay of noise type signals received by the spaced arrays is proportional to the derivative of the correlation function of the signal. When necessary to measure the signal delay with respect to the envelope of the correlation function of the high-frequency noise type signal, the use of a discriminator is proposed in the form of a device operating by the principle of linear conversion of the signal spectrum to a spectrum with different intermediate frequencies with automatic phase compensation on the difference frequency. A calculation of the discrimination characteristic of the discriminator and the results of experimental testing are presented. There are three illustrations and a four-entry bibliography.

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USSR

UDC 612.014.42:538.692

GAK, Ye. Z., KOMAROV, G. P., and ZHGENTI, T. G.

"Mechanism of the Biological Effect of Low-Frequency Magnetic Fields"

Kisinev, Elektronnaya Obrabotka Materialov, No 1, 1971, pp 63-66

**Abstract:** An examination of kinetic effects arising in electrolytes under an alternating magnetic field showed that microscopic vibrations of the entire mass of the liquid should occur with a frequency exceeding the frequency of the magnetic field by a factor of 2. A previous study showed that vortex or laminar motion of the entire mass of an electrolyte occurs in aqueous solutions of electrolytes under the action of an external permanent electric or magnetic field. This motion, which is similar to collective diffusion, leads to a change in the heterogeneous processes occurring in diffusion or mixed kinetics. These phenomena are due to the energy of the electric field since any energy effect of the magnetic field on such systems is practically absent. This study considers the possibility of the rise of similar kinetic effects for the nonstationary case of the effect of a low-frequency magnetic field on electrolytes. The purpose of the study was to verify experimentally the possibility of the effect of such fields on aqueous solutions of electrolytes and on biological objects and to develop a mechanism for the primary

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USSR

UDC 612.89+612.814

KIBYAKOV, A. V., KOMAROV, G. P., and GAK, YE. Z., Chair of Normal Physiology,  
First Medical Institute, Leningrad

"On the Possible Role of Hydrodynamic Factors in Synaptic Transmission"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 57, No 11,  
1971, pp 1,641-1,646

Abstract: One of the many aspects of the process of synaptic transmission of excitation which has not yet been clarified is the question of what kind of forces cause the mass approach of vesicles to the presynaptic membrane. In this article the authors examine the possibility that these forces are the magnetohydrodynamic forces which are generated during the development of the action potential in the following way: at the moment of transmission of the action potential, large electrical currents are generated and lead directly to the occurrence of high-intensity magnetic fields in the premembrane areas, the voltage of which decreases very rapidly with distance. The interaction of the electrical currents with these magnetic fields generates large magnetohydrodynamic forces, which are directed parallel to the axis of the axon, that is, they will exert a significant impulse pressure on the axoplasm and the vesicles contained in it, causing them to move toward the presynaptic membrane.

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UNCLASSIFIED

PROCESSING DATE--17JUL70

TITLE--TRANSUBILICAL INFUSION OF MEDICINAL SOLUTIONS AND BLOOD -U-

AUTHOR--CSTIGOVERKOV, G.YE., NIKOLSKIY, A.D., KOTOV, I.A., KOMAROV, I.A.,  
MURASHOVA, Z.M.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 1, PP 59-62

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--VEIN, LIVER, HEMODYNAMICS, HEART, MEDICINE, BLOOD, ABDOMEN

CENTRAL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1977/1696

STEP NO--UR/C531/70/000/OCL/0059/0062

CIRC ACCESSION NO--APCC44841

UNCLASSIFIED

Acc. Nr: **AP0044841**

Ref. Code: **UR 0531**

PRIMARY SOURCE: **Khirurgiya, 1970, Nr 1, pp 59-62**

**TRANSUMBILICAL INFUSION OF MEDICINAL SOLUTIONS  
AND BLOOD**

**Ostroverkhov, G. Ye.; Nikol'skiy, A. D.; Kotov, I. A.**  
**Komarov, I. A.; Murashova, Z. M.**

In 23 cases the authors used transumbilical infusion of medicamentous solutions to normalize venous pressure. Intraportal introduction of such solutions was found to bring down the pressure in peripheral veins, thereby improving the work of the right heart. Transumbilical infusion of medicinal agents practised in operations on the organs of the abdominal cavity contributes to the normalization of metabolism, raises antitoxic function of the liver and acts beneficially on the regulation of hemodynamics.

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REEL/FRA  
**19771696**

USSR

UDC 621.316.721

AZAT'YAN, G.A., BELEN'KOV, N.M., YERMOSHIN, V.D., KOMAROV, L.I., KURNOSOV, A.I.

"Analysis Of Operation And Production Technology Of Current Regulator"

Elektron. tekhnika. Nauchno-tekhn. sb. Poluprovodn. pribory (Electronic Technology. Scientific-Technical Collection. Semiconductor Devices), 1970, Issue 3(53), pp 67-72 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 18477)

Translation: The circuit is considered of a current regulating two-terminal network using transistors and semiconductor diodes, which is intended to be accomplished as a hybrid microcircuit. The production technology for the hybrid circuit is considered and its parameters are cited. 5 ill. 5 ref. S.D.

1/1

I/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--TRANSMISSION BAND OF THE RECORDING CHANNEL DURING DETECTION OF  
MODULATED SEQUENCE OF LIGHT PULSES -U-  
AUTHOR-(03)-KOMAROV, L.I., MELAMID, A.E., PISAREVSKIY, A.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKLAD. SPEKTROSK (USSR), VOL. 12, NO. 4, P. 755-6 (APRIL 1970)

DATE PUBLISHED----APR 70

SUBJECT AREAS--PHYSICS, NAVIGATION

TOPIC TAGS--PHOTON, SIGNAL TO NOISE RATIO, OPTIC DENSITY, LIGHT PULSE

CONTROL MARKING---NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/1409

STEP NO--UR/0368/70/012/004/0755/0756

CIRC ACCESSION NO--AP0138419

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138419

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE WORK CONCERNED THE DETERMINATION OF SPECTRAL DENSITY OF SIGNAL OBTAINED BY STATISTICAL MODULATION OF PULSE SEQUENCES. THESE WERE DERIVED FROM PHOTOMULTIPLY DETECTING WEAK RADIATION, AND THUS OPERATING WITH DISCRETE PHOTON REGIME. THE MATHEMATICAL ANALYSIS PROVIDES AN EQUATION OF OPTICAL DENSITY WHICH ALLOWS A FAMILY OF CURVES TO BE PLOTTED, AND INCLUDES VARIOUS INPUT PARAMETERS CORRESPONDING TO ACTUAL CONDITIONS. THE INTRODUCTION OF NOISE PARAMETER DOES NOT CHANGE THE STRUCTURE OF EXPRESSION FOR THE OPTICAL DENSITY, AND THE METHOD ENSURES DERIVATION OF SIGNAL-NOISE RATIO.

UNCLASSIFIED

USSR

UDC 615.12-78-07:515.155.18(047)

KUMAROV, I. S., and SHULMAN, K. M., Joint Laboratory of Artificial Heart and Valve Prostheses; Scientific Research Institute of Clinical and Experimental Surgery; Ministry of Health USSR, and Institute of Cardiovascular Surgery and A. N. Bakulev, Academy of Medical Sciences, USSR

"The Problem of Blood Trauma during the Operation of an Implanted Artificial Heart"

Moscow, Grudnaya Khirurgiya, Vol 12, No 3, May/Jun 70, pp 87-91

Abstract: The characteristics of anemia resulting from the traumatic effect on red blood cells (RBC) of cardiac prostheses, especially in cases of implantation of artificial valves, were discussed. Fragmentation of RBC results in an increase in free plasma hemoglobin, and an increase in levels of erythropoietic and leukopoietic elements in bone marrow, indicating the presence of a hemolytic factor in anemia. "Aging" of RBC ( $T_{1/2}$ ) occurs, which accounts for the continuance and aggravation of anemia. Of the materials from which artificial valves are made, stainless steel is the best. There are numerous now promising developments in plastics, but they are still in the experimental stage. Regardless of the material, the most important factor is the smoothness of the prosthetic valve implanted in the heart.

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1/2 007 UNCLASSIFIED  
TITLE--BLEACHING OF FIBROUS MATERIALS -U-  
AUTHOR--(C2)-KEMAROV, F.P., BULYGINA, G.K.  
COUNTRY OF INFO--USSR  
SOURCE--U.S.S.R. 263,407  
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRATSY, TOVARNYE ZNAKI 1970  
DATE PUBLISHED--04FE870  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--PAPER, PATENT, SODIUM HYDROXIDE, HYDROGEN PERCHLORATE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
FILE NO--3004/1842  
STEP NO--UR/0482/70/000/000/0000/0000  
PROCESSING DATE--

UNCLASSIFIED

PROCESSING DATE--20NOV70

2/2 007

CIRC ACCESSION NO--AA0132107

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FIBROUS MATERIALS: E.G. PAPER, ARE BLEACHED IN CONTINUOUS OR BATCH APP. BY INTRODUCING SOLNS. OF H SUB2 O SUB2, NSH, AND WATER GLASS SEP. AND WITH MIXING INTO THE SUSPENSION PREPARED TO SMALLER THAN OR EQUAL TO 40DEGREES. THE SUSPENSION IS THEN HEATED TO 55-70DEGREES AND BLEACHED.

FACILITY: ALL UNION

SCIENTIFIC RESEARCH INSTITUTE OF THE CELLULOSE PAPER INDUSTRY.

UNCLASSIFIED

USSR

UDC 621.396.75

K  
KOMAROV, G. A., LARIONOV, A. S., MEDVEDEVA, L. T., PRAVDUKHIN, V. M.

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USSR

GAK, Ye. Z., KOMAROV, G. P., and ZHGENTI, T. G.

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USSR

UDC 612.89+612.814

KIBYAKOV, A. V., KOMAROV, G. P., and GAK, YE. Z., Chair of Normal Physiology,  
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UNCLASSIFIED  
TITLE--TRANSUBILICAL INFUSION OF MEDICAL SOLUTIONS AND BLOOD -U-  
AUTHOR--CSTHOVERKHCY, G.YE., NIKOLSKIY, A.C., KOTOV, I.A., KHMAROV, I.A.,  
MURASHOVA, Z.M.  
COUNTRY OF INFO--USSR  
SOURCE--KHIRURGIYA, 1970, NR 1, PP 59-62  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--VEIN, LIVER, HEMODYNAMICS, HEART, MEDICINE, BLOOD, ABDOMEN  
CENTRAL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
CITY/FRAME--1977/1696  
STEP NC--UR/C531/70/000/001/0059/0062  
225/87

Acc. Nr: AP0044841

Ref. Code: UR 0531

PRIMARY SOURCE: Khirurgiya, 1970, Nr 1, pp 59-62

TRANSUMBILICAL INFUSION OF MEDICINAL SOLUTIONS  
AND BLOOD

Ostroverkhov, G. Ye.; Nikol'skiy, A. D.; Kotov, I. A.  
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REEL/FRA  
19771696

USSR

UDC 621.316.721

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1/2 028  
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MODULATED SEQUENCE OF LIGHT PULSES -U-  
AUTHOR-(03)-KOMAROV, L.I., MELAMID, A.E., PISAREVSKIY, A.N.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. PRIKLAD. SPEKTROSK (USSR), VOL. 12, NO. 4, P. 755-6 (APRIL  
1970)  
DATE PUBLISHED----APR 70  
SUBJECT AREAS--PHYSICS, NAVIGATION  
TOPIC TAGS--PHOTON, SIGNAL TO NOISE RATIO, OPTIC DENSITY, LIGHT PULSE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3008/1409  
STEP NO--UR/0368/70/012/004/0755/0756  
NO--AP0138419  
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

2/2 028

CIRC ACCESSION NO--AP0138419

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE WORK CONCERNED THE DETERMINATION OF SPECTRAL DENSITY OF SIGNAL OBTAINED BY STATISTICAL MODULATION OF PULSE SEQUENCES. THESE WERE DERIVED FROM PHOTOMULTIPLE DETECTING WEAK RADIATION, AND THUS OPERATING WITH DISCRETE PHOTON REGIME. THE MATHEMATICAL ANALYSIS PROVIDES AN EQUATION OF OPTICAL DENSITY WHICH ALLOWS A FAMILY OF CURVES TO BE PLOTTED, AND INCLUDES VARIOUS INPUT PARAMETERS CORRESPONDING TO ACTUAL CONDITIONS. THE INTRODUCTION OF NOISE PARAMETER DOES NOT CHANGE THE STRUCTURE OF EXPRESSION FOR THE OPTICAL DENSITY, AND THE METHOD ENSURES DERIVATION OF SIGNAL-NOISE RATIO.

UNCLASSIFIED

UDC 616.12-78-07:616.155.18(047)

USSR

KOMAROV, I. S., and SHUL'MAN, K. M., Joint Laboratory of Artificial Heart and Valve Prostheses; Scientific Research Institute of Clinical and Experimental Surgery; Ministry of Health USSR, and Institute of Cardiovascular Surgery imeni A. N. Bakulev, Academy of Medical Sciences, USSR

"The Problem of Blood Trauma during the Operation of an Implanted Artificial Heart"

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Acc. Nr.: AR0051441

weight from the weight stipulated in the drawing. This method is highly productive (up to 240 molds per hour), since the consolidation requires 7-9 seconds, special friable mixtures are not required, and the molds are consolidated at low pressing pressures (6-7 kg force/cm<sup>2</sup>). The method of successive pressing of casting molds with sharply defined high models may be recommended for introduction into mass production; this will considerably expand the area of application of the pressing method and will increase the productivity of molding machines.

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REEL/FRA  
19811615

UDC 621.791.72:669.71.725.721

USSR

SHIGANOV, I. N., Engineer, and KOMAROV, M. A., Candidate of Technical Sciences

"Electron-Beam Welding of an Al-Be-Mg Alloy"

Moscow, Svarochnoye Proizvodstvo, No 10, 1973, pp 11-14

Abstract: This work was devoted to development of rational procedures for electron-beam welding of parts thicker than 10 mm, and an alloy containing Al-30 Be-5 Mg, in the form of 10-mm thick sheets, 20-mm thick plates, and 250-mm diameter rings with a 12-mm wall thickness was tested. Electron-beam welding should be done with longitudinal beam oscillations with a frequency of 50 Hz and an amplitude of 2-3 mm. Also an insert of low-alloy aluminum alloys should be used and not contain a large amount of elements with a high vapor tension which prevents seam formation when vaporized. Thickness of the insert should be chosen such that the percentage participation of the base metal in seam formation does not exceed 50%. Strength of weld joints for the Al-Be-Mg alloy welded by the above method was 30 kgf/mm<sup>2</sup>, which was lower than that of the base metal (40 kgf/mm<sup>2</sup>). Thus, it is necessary to pursue work in this direction in order to find means of increasing seam metal strength. 4 figures, 3 tables, 4 bibliographic references.

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UDC 621.791.72.01:669.715

USSR

KOMAROV, M. A., Candidate of Technical Sciences, and SHIGANOV, I. N., Engineer

"Features of Electron-Beam Welding of an Alloy of the Al-30Be-5Mg System"

Moscow, Svarochnoye Proizvodstvo, No 8, Aug 73, pp 22-24

Abstract: The features of electron-beam welding were studied for ABM1 alloy (Al-30Be-5Mg) with deep melting in combination with the features of the alloy structure and composition where it was found that specific weld seam defects are caused in the form of a continuous cavity. Introduction of longitudinal beam oscillations with a frequency of 50 hz and amplitude of 2-3 mm makes it possible to produce deep melting during electron-beam welding of the alloy and to remove the cavity formation. Electron-beam welding is accompanied by considerable vaporization of magnesium which leads to heterogeneity of chemical composition and hardness of metal in different sections of the weld joint. Redistribution of the beryllium constituent, depending on the thermal mode of welding, takes place in the transition zone. Four figures, one table, four bibliographic references.

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USSR

UDC 621.791.052.011.669.71

KONAROV, M. A., Engineer, GITARSKIY, L. S., Engineer, LOBZHANIDZE, A. V.,  
Engineer, and SMETANNIKOV, V. V., Engineer

"Properties of Welded Joints of Aluminum-Beryllium Alloy"

Moscow, Svarochnoye Proizvodstvo, No 9 (443), Sep 71, pp 26-28

Abstract: Properties of welded joints of No 1, No 2, Be-31Al, Be-41Al, and Be-38Al Al-Be-alloys (0.8-3.0 mm thick sheets) welded by the argon-arc and electron beam methods, were experimentally investigated. The results are discussed by reference to graphs showing the diagram of state of Al-Be and effect of welding rate on mechanical properties of argon-arc welded joints of 2.0-mm-thick sheets and their microstructures. The experiments demonstrated that high quality welds on sheets of Al-Be alloys can be obtained by d.c. argon-arc welding of direct polarity in a chamber with controllable atmosphere. A redistribution of the Be-component in the thermal influence zone and the seam metal takes place, influenced by the Al-Be welding thermal cycle. The strength of Ar-arc welded joints was found to be 34 kg/mm<sup>2</sup>; their plasticity and ductility characteristics exceeded the characteristics of the initial metal. In order to obtain a quality weld by the electron-beam method, the welding must be performed in two operations (with a sharp beam and with a

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- 85 -

USSR

KOMAROV, M. A., et al., Svarochnoye Proizvodstvo, No 9 (443), Sep 71, pp 26-28  
defocused beam), but the properties of such joints are lower than the  
properties obtained by Ar-arc welding. Five illustrations, three  
tables, six bibliographic references.

2/2



UDC 621.791.725+669.295+669.14

USSR

IGNATOVSKAYA, G. S., Engineer, and KOMAROV, M. A., Candidate of Engineering Sciences

"Welding Beryllium With Titanium and Steel"

Moscow, Svarochnoye Proizvodstvo, No 1, Jan 73, pp 17-18

Abstract: The possibility of welding beryllium with OT4 titanium alloy and 1Kh18N10T stainless steel was investigated. Rods of distilled beryllium (coarseness of initial powder was 355 microns) were used. The effect of the intermediate strip material was studied along with welding temperature and time and their effect on weld joint strength. Tests on the direct welding of beryllium to steel and titanium did not give good results. Therefore a material was selected which had a region of solid solutions with beryllium at high temperatures. The best material was found to be silver in comparison with nickel and copper. Using a silver intermediate strip, welds with 1Kh18N10T and OT4 were vacuum tight and had a strength of more than 30 kgf/mm<sup>2</sup>. A welding temperature of 750°C was the best temperature to yield the highest strengths: 35.0-39.1 kgf/mm<sup>2</sup> and 37.2-42.2 kgf/mm<sup>2</sup> for 1Kh18N10T and OT4, respectively. Cryogenic tests showed that weld joint strength at -196 and -70°C was almost the same as at room temperature.

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USSR

IGNATOVSKAYA, G. S., and KOMAROV, M. A., Svarochnoye Proizvodstvo, No 1,  
Jan 73, pp 17-18

The maximum operating temperature for Be+1Kh18N10T and Be+OT4 welds was  
found to be 300°C. Four figures, 4 bibliographic references.

2/2

- 55 -

USSR

UDC:669.71'721:620.193;539.319  
KOMAROV, M. F., BUYNOV, N. N., KAGANOVICH, L. I., Institute of Metal Physics,  
Academy of Sciences USSR  
"Microstructure and Corrosion Properties of Aluminum-Magnesium Alloy  
Following Extended Natural Aging"

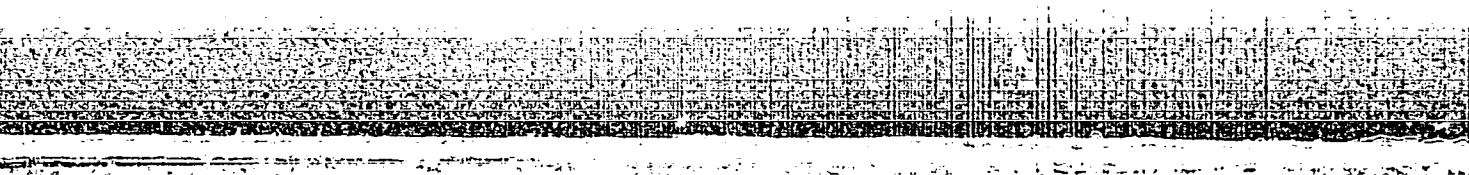
Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 2, 1973,  
pp 358-364

Abstract: Electron microscope studies of aluminum-magnesium alloys with 11% Mg and corrosion tests under stress are performed. The electron microscope studies indicate that extended natural aging forms hexagonal close-packed zones with ordered structure. The corrosion testing and electron-microscope data indicate that the reason for the sharp decrease in corrosion-cracking resistance of aluminum-magnesium alloys following extended natural and low-temperature aging is separation of the  $\beta$ -phase along the grain boundaries as a continuous film.

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**"APPROVED FOR RELEASE: 09/17/2001**

**CIA-RDP86-00513R001401420010-8**



**APPROVED FOR RELEASE: 09/17/2001**

**CIA-RDP86-00513R001401420010-8"**

USSR

UNK 621 791 72:669.71 725 721

SENKOV, I. B., Engineer, and KUMAROV, N. A., Candidate of Technical Sciences

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"Properties of Welded Joints of Aluminum-Beryllium Alloy"

Moscow, Svarochnoye Proizvodstvo, No 9 (443), Sep 71, pp 26-28

Abstract: Properties of welded joints of No 1, No 2, Be-31Al, Be-41Al, and Be-38Al Al-Be-alloys (0.8-3.0 mm thick sheets) welded by the argon-arc and electron beam methods, were experimentally investigated. The results are discussed by reference to graphs showing the diagram of state of Al-Be and effect of welding rate on mechanical properties of argon-arc welded joints of 2.0-mm-thick sheets and their microstructures. The experiments demonstrated that high quality welds on sheets of Al-Be alloys can be obtained by d.c. argon-arc welding of direct polarity in a chamber with controllable atmosphere. A redistribution of the Be-component in the thermal influence zone and the seam metal takes place, influenced by the Al-Be welding thermal cycle. The strength of Ar-arc welded joints was found to be  $34 \text{ kg/mm}^2$ ; their plasticity and ductility characteristics exceeded the characteristics of the initial metal. In order to obtain a quality weld by the electron-beam method, the welding must be performed in two operations (with a sharp beam and with a  $1/2$

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KOMAROV, M. A., et al., Svarochnoye Proizvodstvo, No 9 (443), Sep 71, pp 26-28

defocused beam), but the properties of such joints are lower than the properties obtained by Ar-arc welding. Five illustrations, three tables, six bibliographic references.

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USSR

UDC 621.791.725+669.295+669.14

IGNATOVSKAYA, G. S., Engineer, and KOMAROV, M. A., Candidate of Engineering Sciences

"Welding Beryllium With Titanium and Steel"

Moscow, Svarochnoye Proizvodstvo, No 1, Jan 73, pp 17-18

Abstract: The possibility of welding beryllium with OT4 titanium alloy and IKh18N10T stainless steel was investigated. Rods of distilled beryllium (coarseness of initial powder was 355 microns) were used. The effect of the intermediate strip material was studied along with welding temperature and time and their effect on weld joint strength. Tests on the direct welding of beryllium to steel and titanium did not give good results. Therefore a material was selected which had a region of solid solutions with beryllium at high temperatures. The best material was found to be silver in comparison with nickel and copper. Using a silver intermediate strip, welds with IKh18N10T and OT4 were vacuum tight and had a strength of more than 30 kgf/mm<sup>2</sup>. A welding temperature of 750°C was the best temperature to yield the highest strengths: 35.0-39.1 kgf/mm<sup>2</sup> and 37.2-42.2 kgf/mm<sup>2</sup> for IKh18N10T and OT4, respectively. Cryogenic tests showed that weld joint strength at -196 and -70°C was almost the same as at room temperature.

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IGNATOVSILAYA, G. S., and KOMAROV, M. A., Svarochnoye Proizvodstvo, No 1,  
Jan 73, pp 17-18

The maximum operating temperature for Be+1Kh18N10T and Be+OT4 welds was  
found to be 300°C. Four figures, 4 bibliographic references.

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USSR

UDC:669.71'721:620.193;539.319

KOMAROV, M. F., BUYNOV, N. N., KAGANOVICH, L. I., Institute of Metal Physics,  
Academy of Sciences USSR  
"Microstructure and Corrosion Properties of Aluminum-Magnesium Alloy  
Following Extended Natural Aging"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 2, 1973,  
pp 358-364

Abstract: Electron microscope studies of aluminum-magnesium alloys with 11% Mg and corrosion tests under stress are performed. The electron microscope studies indicate that extended natural aging forms hexagonal close-packed zones with ordered structure. The corrosion testing and electron-microscope data indicate that the reason for the sharp decrease in corrosion-cracking resistance of aluminum-magnesium alloys following extended natural and low-temperature aging is separation of the  $\beta$ -phase along the grain boundaries as a continuous film.

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USSR

UDC 621.357.7:660.65'5(088.8)

KOCHMAN, E. D., KRAVTSOVA, R. I., and KOMAROV, N. V., Kazakstan Agricultural Institute

"Process for the Electrolytic Precipitation of Tin Zinc Alloys"

Author's Certificate 344027, filed 28 Dec 70, published 11 Aug 72 (from Referativnyi Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8E322P)

Translation: A process is patented for the electrochemical precipitation of tin zinc alloys. It is improved in that in order to increase the stability of the electrolyte and the velocity of the precipitation of the alloy, hydrazine sulfate and ethylamine are added to the electrolyte resulting in the following composition: (g/liter)  $\text{SnCl}_2$ , 12-18;  $\text{ZnSO}_4$ , 25-38;  $\text{K}_4\text{P}_2\text{O}_7$ , 150-230; the hydrazine sulfate 2-6; the ethylamine (20% solution), 1-3; gelatin, 0.5-1; the process is carried out at a pH of 8.5-9, a temperature of 40-70°, during the application of a variable current density of 1-10 amps/decimeter<sup>2</sup> on a stationary current density 0.5-10 amps/decimeter<sup>2</sup> using different alloys of zinc and tin. The concentration of tin in the alloy was 80-90%. Theoretical yield was about 81%.

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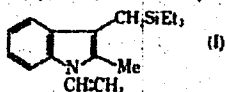
AP0045142

Abstracting Service:  
CHEMICAL ABST.

Ref. Code:

UR0409

90563z Synthesis of silicon-containing N-vinylindoles. ~~Ko-~~  
~~marov, N. V. Roman, V. K. (Irkutsk. Inst. Org. Khim., Ir-~~  
~~kutsk, USSR). Khim. Geterotsikl. Soedin. 1970, (1), 130 (Russ).~~  
Heating 9.5 g 2-methyl-3-(triethylsilylmethyl)indole, 0.25 g  
K and 90 ml dioxane in an autoclave under  $C_2H_2$  at 13 atm in-  
itially to 190° gave in 1-2 hr 52% 2-methyl-3-(triethylsilyl-  
methyl)-N-vinylindole (I),  $b_p$  140-50°,  $d^{20}_4$  0.9985,  $n^{20}_D$  1.5750.



Similarly was prepd. 2-methyl-3-[3-(methyldiethylsilyl)propyl]-  
N-vinylindole,  $b_p$  164-5°,  $d^{20}_4$  0.9738,  $n^{20}_D$  1.5578. Ir spectra  
are reported. The products are polymd. by  $SnCl_4$  or  $BF_3$  to  
greenish solids. G. M. Kosolapoff

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Acc. Nr:

AP0053456

Abstracting Service:  
CHEMICAL ABST.

Ref. Code:

4R 0366

110702z Alkyl(aryl)thioalkoxyethylenes. Shostakovskii, M.  
F.; Komarov, N. V.; Mikhailov, Z. I.; Kolosnitsvna, T. I.  
(Irkutsk. Inst. Org. Khim., Irkutsk, USSR). *Zh. Org. Khim.*  
1970, 6(2), 233-7 (Russ). The reaction of  $RS(CH_2)_nOH$  with  
 $HC:CH$  in the presence of  $RS(CH_2)_nOK$  gave ~80%  $RS(CH_2)_n-$   
 $OCH:CH_2$  (I) (R and n given): Pr, 2; Bu, 2; heptyl, 2; Ph-  
 $CH_2$ , 2; Et, 3; Pr, 3; neopentyl, 3; heptyl, 3; Ph, 3; and  
 $PhCH_2$ , 3. The reaction of I (R = Bu, n = 3) (II) with BuOH  
gave  $BuS(CH_2)_3OCHMeOBu$ , which on prolonged heating split  
to  $MeCH(OBu)_2$  and  $MeCH[O(CH_2)_3SBu]_2$  (III). Condensa-  
tion of II with  $BuS(CH_2)_3OH$  also gave III. The reaction of I  
with AcOH gave  $R(CH_2)_nOCHMeOAc$ . CPJR

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19830481

USSR

UDC: 547.754'128.07

SHOSTAKOVSKIY, M. F., KOMAROV, N. V., ROMAN, V. K.

"A Method of Producing  $\beta$ -Silicon Substituted Indoles"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratztsy, Tovarnyye Znaki,  
No 7, 4 Feb 70, pp 28-29, patent No 262905, filed 4 Apr 67

Translation: This Author's Certificate introduces a method of producing  $\beta$ -silicon substituted indoles by interacting organosilicon ketones with phenylhydrazine hydro-chloride in the presence of cuprous chloride as a catalyst at a temperature of 160-200°C.

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1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--THIYLATION OF VINYL ETHERS OF AMINOETHANOLS -U-

AUTHOR--(03)-SEREBRENNIKOVA, E.V., KOMAROV, N.V., KAYGORODOVA, V.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 828-31

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANOSILICON COMPOUND, THIOL, NITRILE, ORGANIC SYNTHESIS, UV  
LIGHT, AMINE, ETHANOL, ETHER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1378

STEP NO--UR/0079/70/040/004/0828/0831

CIRC ACCESSION NO--AP0128778

UNCLASSIFIED

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CIRC ACCESSION NO--AP0129778  
ABSTRACT/EXTRACT--(U) GP-0-  
GRAPHIC INFORMATION.

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS

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Acc. Nr:

AP0101488

Abstracting Service:

CHEMICAL ABST. 6-70

Ref. Code:

4R0079

121641e Interaction of distannoxanes, alkoxy- and siloxy-stannanes with sodium, sodium acetylides, and sodium methylate. Komarov, N. V.; Sklyanova, A. M.; Akchurina, I. S. (Irkutsk Inst. Org. Khim., Irkutsk, USSR). *Zh. Obshch. Khim.* 1970, 40(2), 336-9 (Russ). In reaction of Na, MeONa or Na acetylides with compds. contg. SnOSn, SnOSi and SnOC bonds, the Sn-O link is most reactive. Adding 2.3 g Na to 42.78 g  $(Et_3Sn)_2O$  resulted in exothermic reaction which after 2 days standing, followed by addn. of 10.85 g  $Me_2SiCl_2$  and heating in  $Et_2O$  7 hr gave 81.6%  $Me_2SiOSnEt_3$ , b<sub>76-7°</sub>, d<sub>4°</sub> 1.1638, n<sub>D</sub><sup>20</sup> 1.4550, 78.4%  $(Et_3Sn)_2O$  and NaCl. Use of  $Et_3SiCl$  in the above gave 72%  $Et_3SiOSnEt_3$  (I) b<sub>91°</sub>, 1.1194, 1.4625. Similarly,  $Et_3SnOMe$  and Na, followed by  $Et_3SiCl$  gave 76%  $Et_3SiOMe$  and 81%  $(Et_3Sn)_2O$ . Treating I with Na, then with  $Me_2SiCl_2$ , gave 59%  $Me_2SiOSiEt_3$  and 44.7%  $(Et_3Sn)_2O$ . Reaction of 49 g  $(Et_3Sn)_2O$  with 0.11 mole  $NaC\equiv CH$  gave  $Et_3SnC\equiv CH$ , b<sub>18</sub> 58-9°, and 97%  $Et_3SnC\equiv CSnEt_3$ , b<sub>151-2°</sub>, —, 1.5995. Similar reaction with  $Et_3SnOMe$  gave 7.3% and 63% yields of these, resp.  $PhC\equiv CNa$  and  $(Et_3Sn)_2O$  in  $Et_2O$  gave in 8 hr 55%  $Et_3SnC\equiv CPh$ , b<sub>1</sub> 102-4°, —, 1.5583, and 39%  $Et_3SnC\equiv CCH_3$ , b<sub>1</sub> 79-80°, —, 1.5098. Similar reaction, but with  $Et_3SiOSnEt_3$ , in 12 hr

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gave 63%  $\text{Et}_3\text{SnC:CPh}$ , some  $\text{Et}_3\text{SiOH}$ , and  $\text{PhC:CH}$ . Similarly,  $\text{Et}_3\text{SnOMe}$  gave 84.7%  $\text{Et}_3\text{SnC:CPh}$  and  $\text{MeOH}$ .  $\text{MeONa}$  and  $(\text{Et}_3\text{Sn})_2\text{O}$  in  $\text{Et}_2\text{O}$  overnight gave after treatment with  $\text{Et}_3\text{SiCl}$ , 33.9%  $\text{Et}_3\text{SnOMe}$ , b<sub>p</sub> 78°, 29.4%  $\text{Et}_3\text{SiOSnEt}$ , b<sub>p</sub> 100°, and some starting material; while  $\text{MeONa}$  and  $\text{Et}_3\text{SiOSnEt}$ , followed by  $\text{Me}_3\text{SiCl}$  gave 29.3%  $\text{Et}_3\text{SnOMe}$  and 21%  $\text{Me}_3\text{SiOSiEt}_3$ .

G. M. Kosolapoff

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AP0053421

Abstracting Service:  
CHEMICAL ABST.

Ref. Code:

UR0079

111557t Vinyl ethers of organosilicon alkylthio alkanols. Shostakovskii, M. F.; Mikhailov, Z. I.; Komarov, N. V.; Vlasova, N. N. (Irkutsk. Inst. Org. Khim., Irkutsk, USSR). *Zh. Obshch. Khim.* 1970, 40(1), 84-90 (Russ.). Heating 5.9 g  $\text{Et}_3\text{SiCH}_2\text{CH}_2\text{SH}$  with 1.5 g NaOH and 2.6 g  $\text{ClCH}_2\text{CH}_2\text{OH}$  in aq. EtOH gave 75%  $\text{Et}_3\text{SiCH}_2\text{CH}_2\text{SCH}_2\text{CH}_2\text{OH}$ ,  $b_p$  120°,  $d_4^{20}$  0.9508,  $n_D^{20}$  1.4920. Similarly were prepd. 35-80%  $\text{R}_3\text{Si}(\text{CH}_2)_m\text{S}(\text{CH}_2)_n\text{OH}$  ( $\text{R}$ ,  $m$ , and  $n$  shown):  $\text{Me}_3$ , 2,1,  $b_p$  116°, 0.9038, 1.4725;  $\text{MeEt}_2$ , 2,1,  $b_p$  110°, 0.9466, 1.4805;  $\text{MeEt}_2$ , 2,2,  $b_p$  120°, 0.9480, 1.4872;  $\text{Me}_3$ , 2,2,  $b_p$  121°, 0.9398, 1.4795;  $\text{Me}_3$ , 2,3,  $b_p$  113°, 0.9356, 1.4800;  $\text{Et}_3$ , 2,3,  $b_p$  123°, 0.9480, 1.4890;  $\text{MeEt}_2$ , 3,1,  $b_p$  115°, 0.9273, 1.4810;  $\text{MeEt}_2$ , 3,2,  $b_p$  131°, 0.9395, 1.4880;  $\text{Et}_3$ , 3,2,  $b_p$  120°, 0.9455, 1.4900;  $\text{Me}_3$ , 3,2,  $b_p$  107°, 0.9400, 1.4805;  $\text{Me}_3$ , 3,3,  $b_p$  102°, 0.9315, 1.4762;  $\text{Et}_3$ , 3,3,  $b_p$  134°, 0.9374, 1.4880;  $\text{Pr}_3$ , 3,2,  $b_p$  150°, 0.8951, 1.4705. Irradn. with uv light of a mixt. of 2.9 g  $\text{Et}_3\text{SiCH}_2\text{CH}_2\text{SH}$  and 0.9 g allyl alc. 10 hr gave 47%  $\text{Et}_3\text{SiCH}_2\text{CH}_2\text{SCH}_2\text{CH}_2\text{CH}_2\text{OH}$ ,  $b_p$  120°, 0.9455, 1.4900, providing an alternate route to the compds. above with  $m = 3$ . Heating the above alcs. in dioxane with a catalytic amt. K salt of the alc. under 15-18 atm (initial)  $\text{C}_2\text{H}_2$  1.5 hr at 130-40° gave 40-70%  $\text{R}_3\text{Si}(\text{CH}_2)_m\text{S}(\text{CH}_2)_n\text{OCH}:\text{CH}_2$ : ( $\text{R}$ ,  $m$ , and  $n$  shown):  $\text{Me}_3$ , 2,1,  $b_p$  62°, 0.9141, 1.4700;  $\text{MeEt}_2$ , 2,1,  $b_p$  78°, 0.9126, 1.4750;  $\text{MeEt}_2$ , 2,2,  $b_p$  93°, 0.9211, 1.4810;  $\text{Et}_3$ , 2,2,  $b_p$  121°, 0.9197, 1.4840;  $\text{Me}_3$ , 2,2,  $b_p$  103°, 0.9140, 1.4335;  $\text{Me}_3$ , 2,3,  $b_p$

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85°, 0.9066, 1.4712; Et, 2,3, b<sub>1</sub> 123°, 0.9184, 1.4820; MeEt, 3,1, b<sub>1</sub> 69°, 0.8577, 1.4410; Me, 3,2, b<sub>1</sub> 84°, 0.9092, 1.4755; MeEt, 3,2, b<sub>1</sub> 105°, 0.9196, 1.4830; Et, 3,2, b<sub>1</sub> 137°, 0.9150, 1.4860; Me, 3,3, b<sub>1</sub> 114°, 0.9033, 1.4740; Et, 3,3, b<sub>1</sub> 143°, 0.9172, 1.4840. Alternatively, R<sub>3</sub>Si(CH<sub>2</sub>)<sub>n</sub>SH and ClCH<sub>2</sub>CH<sub>2</sub>OCH:CH<sub>2</sub> emulsified in aq. NaOH at 90° gave the vinyl ether described above in 70% yield. Heating the vinyl ethers with AcOH 30 hr at 60° gave R<sub>3</sub>Si(CH<sub>2</sub>)<sub>n</sub>S(CH<sub>2</sub>)<sub>m</sub>OCHMeOAc (R<sub>3</sub>, m, and n, shown): Me, 2,1, b<sub>1</sub> 92°, 0.9824, 1.4590; Et, 2,2, b<sub>1</sub> 142°, 0.9752, 1.4720; Et, 3,2, b<sub>1</sub> 152°, 0.9695, 1.4718; Me, 2,3, b<sub>1</sub> 125°, 0.9674, 1.4610; Et, 2,3, b<sub>1</sub> 149°, 0.9655, 1.4720; Me, 3,3, b<sub>1</sub> 128°, 0.9616, 1.4620; Et, 3,3, b<sub>1</sub> 165°, 0.9640, 1.4718. Heating the vinyl ethers with PhSH in the presence of (Me<sub>3</sub>CO)<sub>2</sub> catalyst 10 hr at 130-40° or reaction of the vinyl ethers with BuSH in uv light gave 52-92% R<sub>3</sub>Si(CH<sub>2</sub>)<sub>n</sub>S(CH<sub>2</sub>)<sub>m</sub>OCH<sub>2</sub>CH<sub>2</sub>SR<sup>1</sup> (R, R<sup>1</sup>, m, and n shown): Me, Bu, 2,1, b<sub>1</sub> 160°, 0.9513, 1.4875; Et, Ph, 2,2, b<sub>1</sub> 170°, 1.0092, 1.5310; Et, Bu, 2,2, b<sub>1</sub> 195°, 0.9506, 1.4978; Et, Ph, 3,2, b<sub>1</sub> 198°, 1.0211, 1.5435; Et, Bu, 3,2, b<sub>1</sub> 168°, 0.9451, 1.4940; Me, Ph, 3,3, b<sub>1</sub> 175°, 1.0307, 1.5490; Me, Bu, 3,3, b<sub>1</sub> 192°, 0.9380, 1.4860; Et, Ph, 3,3, b<sub>1</sub> 200°, 0.9968, 1.5230; Et, Bu, 3,3, b<sub>1</sub> 200° (0.9409, 1.4925. Et<sub>3</sub>SiCH<sub>2</sub>CH<sub>2</sub>SCH<sub>2</sub>CH<sub>2</sub>OCH:CH<sub>2</sub>, BuOH, and a trace concd. HCl gave, after 0.5 hr at 50°, 57% Et<sub>3</sub>SiCH<sub>2</sub>CH<sub>2</sub>SCH<sub>2</sub>CH<sub>2</sub>OCHMeOBu, b<sub>1</sub> 140°, 0.9342, 1.4740; also prepd. from Et<sub>3</sub>SiCH<sub>2</sub>CH<sub>2</sub>SCH<sub>2</sub>CH<sub>2</sub>OH and BuOCH:CH<sub>2</sub> with HCl catalyst. The vinyl ethers described above added HCl to form extremely unstable R<sub>3</sub>Si(CH<sub>2</sub>)<sub>n</sub>S(CH<sub>2</sub>)<sub>m</sub>OCHClMe, and polymd. with Lewis acids to viscous oils, but were unaffected by peroxidic initiators.

G. M. Kosolapoff

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